EXPEDITION PROFILE

March 22nd, 2019 aboard DISCOVERY Yacht Timely Sale

The International SeaKeepers Society teamed up with the UF/IFAS (University of Florida/Institute of Food and Agricultural Sciences) Sea Grant Extension Program in Miami-Dade County to conduct water quality testing aboard D/Y Timely Sale. This was a part of the Biscayne Bay Water Watch (BBWW) program, a citizen-science based volunteer water quality monitoring study, which consists of participants collecting data concerning different parameters of the bay. The monthly data collection helps to track harmful algal blooms, changes in water quality, and provides a metric for assessing the health of Biscayne Bay.

Ana Zangroniz, Miami-Dade County Extension Agent, UF/IFAS Miami-Dade County Extension Office, Florida SeaGrant was joined by SeaKeeper's staff and Captain Marty Arostegui of D/Y Timely Sale to conduct a scientific experiment comparing two methods of measuring dissolved oxygen (DO). In order to measure dissolved oxygen, the Winkler Titration method is typically used, however an electronic probe has been recently introduced as a new method of testing. To compare the two methods, they took side-by-side water samples from 3 different sites to measure dissolved oxygen levels and tested each sample with both methods. The probe can simply be dipped in the water for a short time, and give a reading on a digital display. The Winkler Method requires filling a sample bottle completely with water and then "fixing" the sample by adding a series of reagents, resulting in a color change. This method requires the sampler to then make a subjective judgment about the color of the liquid. The different methods often lead to a variance in results.

The purpose of this side-by-side test was to compare the results of using an electronic probe vs. Winkler titration, and from there, determine which might be the best method to obtain the most accurate measurements of dissolved oxygen in Florida waters. Dissolved oxygen refers to the level of free, non-compound oxygen present in water or other liquids. It is necessary to many forms of life including fish, invertebrates, bacteria and plants. These organisms use oxygen in respiration, similar to organisms on land. It is an important parameter in assessing water quality because of its influence on the organisms living within a body of water and for this reason, it is imperative that we find the best and most accurate method for measuring dissolved oxygen levels.

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